

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 1 127 534 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
29.05.2002 Bulletin 2002/22

(51) Int Cl.7: **A61B 3/11, A61B 5/16**

(43) Date of publication A2:
29.08.2001 Bulletin 2001/35

(21) Application number: **00122951.7**

(22) Date of filing: **21.10.2000**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

- Nakajima, Ryouji
Hirakata-shi, Osaka-fu (JP)
- Murakami, Shuji
Takaishi-shi, Osaka-fu (JP)
- Fukumoto, Ichiro
Nagaoka-shi, Niigata-ken (JP)
- Uchiyama, Hisashi
Nagaoka-shi, Niigata-ken (JP)
- Fukushima, Shogo
Moriguchi-shi, Osaka-fu (JP)

(30) Priority: **24.02.2000 JP 2000047011**
15.05.2000 JP 2000142409

(71) Applicant: **Matsushita Electric Works, Ltd.**
Kadoma-shi, Osaka-fu 571-8686 (JP)

(72) Inventors:
• Suzuki, Kenshi
Toyono-gun, Osaka-fu (JP)

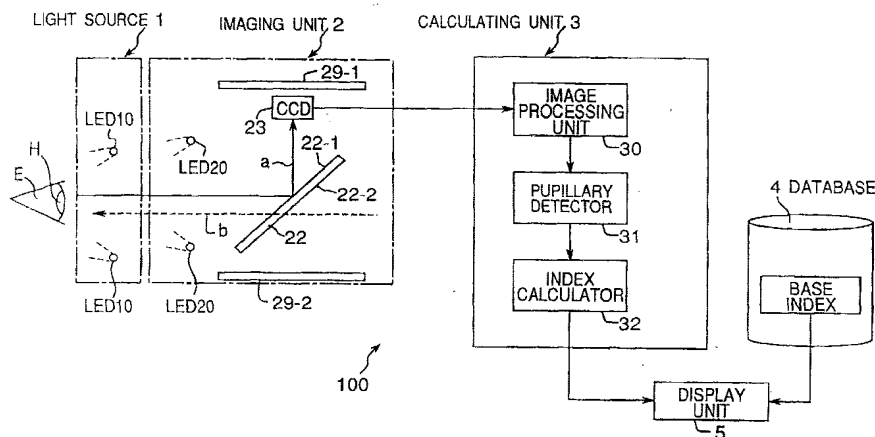
(74) Representative: **Dallmeyer, Georg, Dipl.-Ing. et al**
Patentanwälte
Von Kreisler-Selting-Werner
Bahnhofsvorplatz 1 (Deichmannhaus)
50667 Köln (DE)

(54) Non-invasive brain function examination

(57) A brain function examining apparatus and others for performing an examination of a brain function by detecting a pupillary size of a subject's pupil are provided. The brain function examining apparatus includes a light source for illuminating the pupil, a pupillary detector for detecting the pupillary size, an index calculator for

calculating, based on the pupillary size detected by the pupillary detector, a subject index indicative of a characteristic of the pupil, a database for storing a base index indicative of a characteristic of the pupil that can be used as reference, and an output unit for outputting the subject index, calculated by the index calculator, and the base index stored in the database.

Fig. 1



EP 1 127 534 A3



European Patent
Office

PARTIAL EUROPEAN SEARCH REPORT

Application Number

which under Rule 45 of the European Patent Convention shall be considered, for the purposes of subsequent proceedings, as the European search report

EP 00 12 2951

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 5 422 690 A (ROTHBERG MICHAEL ET AL) 6 June 1995 (1995-06-06) * column 4, line 13 - column 5, line 43 * * column 7, line 23 - line 30 * * column 10, line 64 - column 11, line 3 * ---	1-15, 18-20	A61B3/11 A61B5/16
A		16	
X	EP 0 743 041 A (NIHON KOHDEN CORP) 20 November 1996 (1996-11-20) * column 8, line 28 - line 34 * * column 9, line 1 - line 7 * * column 9, line 33 - line 48 * * column 10, line 28 - line 37 * ---	1-6,10, 12-20	
X	WO 96 03070 A (BETH ISRAEL HOSPITAL; SCINTO LEONARD (US); DAFFNER KIRK R (US)) 8 February 1996 (1996-02-08) * page 21, line 17 - line 26 * * page 22, line 30 - page 23, line 2 * * page 25, line 16 - line 22 * * page 31, line 1 - line 12 * -----	1-4,10, 11	
A		5,7, 12-20	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			A61B
INCOMPLETE SEARCH			
<p>The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC to such an extent that a meaningful search into the state of the art cannot be carried out, or can only be carried out partially, for these claims.</p> <p>Claims searched completely :</p> <p>Claims searched incompletely :</p> <p>Claims not searched :</p> <p>21-26</p> <p>Reason for the limitation of the search:</p> <p>Article 52 (4) EPC - Diagnostic method practised on the human or animal body</p>			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	9 April 2002	Knüpling, M	
CATEGORY OF CITED DOCUMENTS		<p>T : theory or principle underlying the invention</p> <p>E : earlier patent document, but published on, or after the filing date</p> <p>D : document cited in the application</p> <p>L : document cited for other reasons</p> <p>& : member of the same patent family, corresponding document</p>	
<p>X : particularly relevant if taken alone</p> <p>Y : particularly relevant if combined with another document of the same category</p> <p>A : technological background</p> <p>O : non-written disclosure</p> <p>P : intermediate document</p>			

EPC FORM 1503 03/82 (P/4C07)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 12 2951

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

09-04-2002

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 5422690	A	06-06-1995	NONE		
EP 0743041	A	20-11-1996	DE	69604228 D1	21-10-1999
			DE	69604228 T2	20-01-2000
			EP	0743041 A1	20-11-1996
			JP	9028672 A	04-02-1997
			US	5883691 A	16-03-1999
WO 9603070	A	08-02-1996	US	5617872 A	08-04-1997
			AU	693587 B2	02-07-1998
			AU	3200795 A	22-02-1996
			CA	2195877 A1	08-02-1996
			EP	1011415 A1	28-06-2000
			JP	10503209 T	24-03-1998
			WO	9603070 A1	08-02-1996
			US	6162186 A	19-12-2000
			US	5704369 A	06-01-1998
			US	6024707 A	15-02-2000